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Bemidji State University BEMIDJI, MINNESOTA 56601

DIVISION OF SCIENCE & MATHEMATICS
218-755-2920

January 14, 1980

Dr. John W. Cooper
Chief of Regional Licensing Section
Material Licensing Branch
Division of Fuel Cycle and Material Safety
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Dr. Cooper:

This communication is in reference to Control No. 99153, application for renewal of our Byproduct Material License No. 22-07944-01.

Since the deficiencies itemized in your letter of November 7, 1979 appear to pertain to item 15 of the application form, I have rewritten that portion of our application. Please substitute the enclosed two pages (submitted in duplicate) for that portion of the application previously submitted. Two copies of the laboratory rules are also enclosed.

Sincerely,

Alice L. Lindgren

Alice L. Lindgren, Ph.D.
Associate Professor of Biology

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RULES FOR THE ISOTOPES LABORATORY

Bemidji State University, S-216

For All Persons

1. Do NOT eat, drink, smoke, or apply cosmetics in the laboratory. This includes both the wet lab and the counting room.

2. Never pipette by mouth. Use a safety pipettor.

3. When working with unsealed radioactive material in the wet lab, always work over a padded tray.

4. When working with unsealed radioactive material in the wet lab, always wear gloves. Do not wear gloves in the counting room. Dispose of contaminated gloves immediately into the designated container.

5. Pour radioactive waste into the container provided.

6. Mark all contaminated glassware and other materials with radioactive tape unless they are included on a tray or other container that is appropriately labeled.

7. Before leaving the laboratory, wash your hands, monitor your hands and the soles of your shoes. Report any evidence of or suspicion of contamination to the instructor.

8. Report any spills or wounds to the instructor.

Additional for Staff and Assistants

1. Label and log in all isotopes as they come in. Test for contamination of isotope containers when they come in. Contaminated containers must be contained in a beaker which is appropriately labeled before being stored in the locker.

2. If you have occasion to remove radioactive material from the locker or to dispose of radioactive material, enter this action in the log book.

3. Properly mark and log all waste containers before putting them in the storage area under the hood in the wet lab.

4. Decontaminate all contaminated glass and other ware prior to washing. Monitor them before putting them away.

5. Monitor the lab working areas after every laboratory period where the possibility of spills exits. Enter the results on the record.

6. All packaging of contaminated material for shipping will be under the supervision of the Radiation Protection Officer.

Radiation Protection Program

1. Radiation Protection Officer

The radiation protection officer has the responsibility for monitoring the laboratory and keeping proper records of such activity. The radiation protection officer is responsible for enforcing the laboratory rules (See attached copy of rules).

2. Surveys, Records of Surveys, and Laboratory Procedures

The neutron source is leak tested bi-annually by wiping the source with a filter pad which is then placed inside a Bendix Model 1050 radio-assay electroscope to determine the alpha activity. If more than 0.005 microcuries of removable contamination is detected, the source will be returned to the manufacturer.

Students and faculty handling unsealed sources are required to wear gloves and to monitor their hands and shoes before leaving the laboratory. All pipetting is done with safety pipettors. All laboratory work is done in large lined plastic or stainless steel trays. Contaminated glassware is labeled radioactive until it has been decontaminated with an appropriate cleaner. Contaminated glassware is not removed from the isotopes laboratory. No eating, drinking, or smoking is permitted in the laboratory.

The lab is monitored weekly when experiments using unsealed gamma or strong beta sources have been performed. A thin window GM tube and an RCL scaler ratemeter with audio is utilized to monitor bench tops and hoods or any other surface used. If counts above background are detected by audio, the area in question is scrubbed with a decontamination agent, rinsed and dried utilizing paper towels which are disposed into the storage container. The area is rechecked and the procedure repeated if necessary until counts are within background range.

If tritium has been used, any area suspected of contamination is scrubbed in a similar manner. A wetted disc of filter paper is used to wipe questioned areas and is then counted in a cocktail utilizing the liquid scintillation counter. This process is repeated if necessary until counts are within background range.

Records on the date and results of the monitoring are posted in the laboratory. During the months that the laboratory is not used, it is not monitored.

3. Film Badge

When experiments utilizing ^{32}P, ^{59}Fe, ^{51}Cr, ^{131}I, ^{125}I, ^{60}Co and ^{137}Cs are carried out, the instructor wears the one film badge available since this person is the one who is likely to receive the most radiation.

4. Receipt and Storage of Radioactive Materials

When an unsealed source arrives, the packing material is monitored using a thin window GM tube and an RCL scaler ratemeter with audio.

If the activity is not over three times background, the packing material is moistened and the containers wiped with the material and the activity rechecked. Any container showing evidence of surface contamination will be stored in a small beaker in a locker, properly labeled, as a sample with surface contamination. Gloves are worn by persons handling such unsealed sources.

5. Instructions for Persons Working in the Isotopes Laboratory

Students, assistants, janitors, and faculty working in the isotopes laboratory are given a copy of the Laboratory Rules (See attached copy). The rules are discussed with the students at the beginning of every course, and a copy of the rules is posted in the laboratory. The janitors are instructed to not empty the containers marked "radioactive material".